Lab 2 Preparations

Molarity "M": Its number of moles of solution per of solution

* $M = \frac{n}{Vol.}$

* $N = \frac{Wt}{M.wt}$

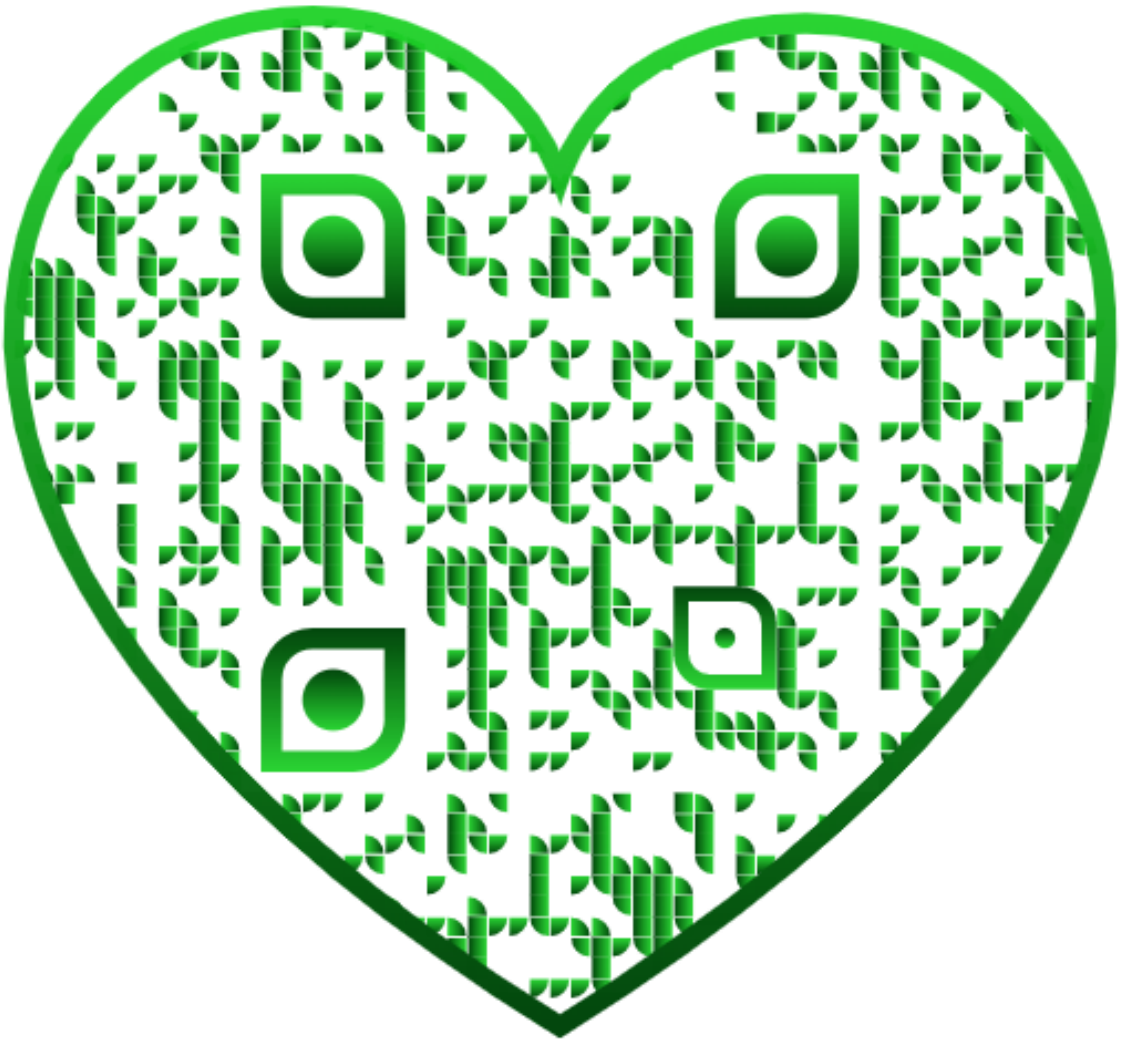
$M = \frac{Wt}{M.wt} \times \frac{1}{Vol.} \quad Mole \longrightarrow$ يحضر بالتر

$M = \frac{Wt}{M.wt} \times \frac{1000}{V(ML)} \quad Mole \longrightarrow$ يحضر بالملي

Ex. How many gram of $AgNO_3$ used to prepar 500 ml of 0.125 M solution m.wt 169.9 gm/mol

$M = \frac{Wt}{M.wt} \times \frac{1000}{V(ML)} \rightarrow \frac{1000 Wt}{1000} \times \frac{M * M.wt * V}{1000}$

$Wt = \frac{0.125 \times 169.9 \times 500}{1000} = 10.619 gm$



follow

Ex:-
Calculate The molarity (M) of solution result from dissolving 20 gm of sodium hydroxide in 2.0 Liter of solution ((Na=23 O=16 H=1))

M-wt = 23+16+1 = 40 g/Mole.

$$M = \frac{wt}{M\text{-}wt} \times \frac{1}{V(L)} = \frac{20}{40} \times \frac{1}{2.0}$$

$$M = 0.25 \text{ Mole}$$

Ex:- How can you prepar. $CaCO_3$
M = 0.04 M V = 2L M-wt = 100
40+12+16×3 = 100

$$\frac{M}{1} = \frac{wt}{M\text{-}wt} \times \frac{1}{V}$$

$$wt = M \times M.wt \times V$$

$$wt = 0.04 \times 100 \times 2 = 8g$$

Ex:- Wt = ? ca(OH)2 N = 0.07
V = 100 Ml

$$M.wt = 40+16\times2+1\times2 = 72$$

$$N = \frac{wt}{e\text{-}q\ wt} \times \frac{1000}{V}$$

$$e\text{-}q\ wt = \frac{M\text{-}wt}{OH} = \frac{72}{2} = 37$$

$$wt = \frac{N \times e\text{-}q\ wt \times 100}{1000}$$

$$Wt = \frac{0.07 \times 37 \times 100}{1000} = 0.259g$$

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(2) Normality "N"

= number of equivalents of solution

$$N = \frac{\text{no of eq}}{V(L)}$$

$$N = \frac{wt}{eq.wt} \times \frac{1}{V\ L}$$ التحضير بالتي

OR

$$\frac{Wt}{eq.wt} \times \frac{1000}{V\ ml}$$

Ex:- Wt = ? (Na_2CO_3) V = 250 ml

N = 0.20 (m.Wt = 106 g mol^{-1})

$$N = \frac{wt}{eq.wt} \times \frac{1000}{V(ml)}$$

$$N = \frac{M.wt}{\text{Na}_2\text{CO}_3 \text{ ions}} = \frac{106}{2} = 53\ g \cdot eq^{-1}$$

$$N = \frac{wt.?}{eq.wt} \times \frac{1000}{V(ml)}$$

$$\frac{1000\,wt}{1000} = \frac{N \times eq.wt \times V}{1000}$$

$$Wt = \frac{0.20 \times 53 \times 250}{1000} = 2.65\ g\ M$$

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follow

Determintion of concentration NaOH

Prenceple $NaOH + Cl \rightarrow NaCl + H_2O$

Prenceple :

$Na^+OH + H^+Cl^- \rightarrow NaCl + H_2O$

NaOH ← تحديد التركيز ... HCl ← معلوم التركيز

tebrand = ? tetrant = 0.1 V

عندما الحمايرة يوجد تركيز NaOH

HCl 0.1 N1 → NaOH + Ph.Ph

$T_1 = 0$ $V = 14$

$T_1 = V_1 = 0$ $V_F = 14$ $V_C = 14$ $T_2 = 14$

$T_2 = V_1 = 14$ $V_F = 27.5$ $V_C = 13.5$

$T_3 = V_1 = 27.5$ $V_F = 39$ $V_C = 11.5$

$V_{NaCl} = \frac{14 + 13.5 + 11.5}{3} = 13\ ml$

$V = (N \cdot V1) = (N \cdot V)$

$N = \frac{(N \cdot V1)}{V}$

$N = \frac{0.1 \times 13}{10} = 0.13\ g/L$

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